

XIV.—*Descriptions and Records of Bees.*—LXXXIV.

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THE Indian bees recorded below were received from Mr. T. V. Ramakrishna Ayyar, Government Entomologist of Madras, and were collected by him, except when the contrary is stated.

Crocisa smithii, Dalla Torre.

Coorg, Sidhapur, Roekhill, 3500 ft., April 23–26.

This was described from "Bombay, Sumatra, Borneo." Bombay is herewith designated as the type-locality.

Crocisa ramosella, sp. n.

♀.—Length 10.5 mm.

The hair-spots white, not at all tinged with blue. Superficially appearing identical with *C. ramosa*, Lep., from France, but differing thus: flagellum longer, the middle joints longer than wide; posterior spots on mesothorax much larger; scutellum much more finely punctured, and much more deeply excised posteriorly, its margin *W*-like; transverse bands at sides of first two abdominal segments broader. In the flagellum this resembles the Arabian *C. fallibilis*, Kohl, but the scape is not longer than in *ramosa*, and *fallibilis* has the scutellum as in *ramosa*.

Chittoor, April 19–27, 1915.

Crocisa ablateralis, sp. n.

♂.—Length 12 mm.

Robust, with pure white markings. Very close to *C. ramosella*, but larger, with a tuft of white hair on the scutellum at the emargination (in addition to the white hair projecting from beneath the emargination, which is present in both); inner sides of scutellar lobes shallowly but very distinctly emarginate about the middle; patch of white hair on pleura considerably larger; hind tibiae with more white hair; transverse bands on first abdominal segment narrowing mesad, subacute, thus quite different from those on second, which are very obtuse, with the upper edge concave (in *ramosella* the bands are nearly the same on the two segments); second abdominal segment less closely punctured, and with the basal half greenish.

Kurnool District, Tippanur, Aug. 16, 1913.

Crocisa reductula, sp. n.

♀.—Length 11 mm.

With pure white markings. Also similar to *C. ramosella*, but more slender, and also differing thus: anterior mesothoracic spots a little broader than long (conspicuously longer than broad in *ramosella*); a very small spot instead of a stripe on each lateral margin of mesothorax; emargination of scutellum forming a much wider angle; first two abdominal segments with strong purple tints on basal half; transverse extension of marks at sides of first segment short and pointed; third and fourth segments with only spots placed some distance from the lateral margins, fifth with a pair of large round spots placed more laterally; last ventral segment conspicuously produced; white hair on outer side of hind tibiæ confined to basal half.

Bababuddin Hills, Mysore, 4700 ft., June 1, 1915.

Crocisa ramakrishnæ, sp. n.

♀.—Length about 12 mm.

With very pale blue markings, which are not shining. Median stripe of mesothorax long, extending to front margin; anterior lateral spots rather small, longer than broad; lateral margins with complete stripes, very narrow posteriorly; posterior spots of mesothorax pyriform, pointed mesad; scutellum without spots, shining, sparsely punctured, the hind margin **W**-like, a tuft of white hair beneath the emargination; mesopleura with a large hairless coarsely punctured space in middle; anterior wings fuliginous; tibiæ and basitarsi with bluish-white hair on outer side, hardly going beyond middle on hind tibiæ. Abdomen with very broadly interrupted blue bands, the basal band of first segment narrow, and rather narrowly interrupted; pygidial plate with a weak keel not reaching its base. In my table in 'Entomologist,' 1910, p. 217, this runs to *C. decora*, Smith, which has a broad basal band on first abdominal segment, and is otherwise quite distinct. It also fails to find a place in the tables of Friese and Bingham, and is unlike any described Indian species.

Type from Marudamalai, Coimbatore, S. India, 2000 ft., Aug. 18, 1912. Another is from Coorg Sanivarsandai, Hansey Estate, 4000 ft., April 29–30, 1913.

Anthophora subinsularis (Strand).

Bangalore, 3000 ft., May 8, 1913.

Strand described this as a variety of *A. insularis*, Smith,

because it seemed to differ somewhat from Bingham's description. It is apparently quite distinct from the true *insularis*, which was described from Sarawak. It is closely related to *A. vigilans*, Smith, having quite the same appearance.

Xylocopa sigiriana (Cockerell).

♀. Bababuddin Hills, Mysore, 4700 ft., June 1, 1915.

Described as a subspecies of *X. anethystina*, but evidently a distinct species.

Xylocopa ignita, Smith.

♀. Dodabetta, Nilgiris, 8000 ft., May 1-3, 1916.

Larger than the last, with longer second submarginal cell. This does not quite agree with Maidl's description, but I think it is Smith's *ignita*. Possibly two or more closely related species have been confused under this name.

Hypanthidium salemense, sp. n.

♂. (Type).—Length about 11 mm., anterior wing 8.5.

Black, with cream-coloured markings, the pubescence very scanty, pure white; femora with a red stripe on upper side, and hind femora largely reddish behind; first abdominal segment with a short red stripe on each side basally; mandibles elongate; antennæ entirely black; front and vertex very densely punctured; mesothorax and scutellum very densely and strongly punctured; scutellum prominent, sharp-edged, rounded, emarginate in middle; tegulae punctured, smooth in middle. Wings dilute fuliginous; second recurrent nervure going far beyond end of second submarginal cell; hair on inner side of tarsi orange; spurs red; no pulvilli; seventh abdominal segment very broadly rounded, with a keel down the middle, the hind margin might be called truncate; segments 3 to 6 with lateral teeth, that on 3 small. The pale markings are as follows: mandibles (except apex), clypeus (except narrow lower margin), rest of face except large black triangular area above clypeus, a stripe mesad of each antenna, an elongate mark below middle ocellus, a finger-like extension along each anterior orbit to level of middle ocellus, a broad band on upper part of each cheek, and two elongate spots on occiput, ends of tubercles, L-shaped marginal stripe on each side of mesothorax, axillæ, large mark on mesopleura, two crescentic marks on each tegula, broad stripe on under side of anterior and middle femora, long stripe on anterior and middle and

short (basal) one on hind tibiæ, two large marks on each side of first six abdominal segments, on first oblong, on second and third long and transverse, on the others shorter, that on sixth square.

♀.—Length a little over 8 mm.

Ventral scopa pale yellowish; clypeus black, with a large light spot near each lower corner; sixth abdominal segment with only minute light dots.

Salem, S. India, Dec. 2-18, 1914.

By its characters, this falls in the American genus *Hypanthidium*, but it is a very distinct form. The end of the abdomen recalls that of *Anthidium pulchellum*, Klug.

Dianthidium ramakrishnæ, sp. n.

♀.—Length about 6.5 mm.

Head, thorax, and abdomen black, with cream-coloured markings as follows: large spot on mandibles, clypeus, large triangular lateral face-marks (the inner part of each formed by a lateral spot on supraclypeal area), stripes on cheeks, reaching sides of occiput, band on mesothorax above each tegula (not reaching anterior corners of mesothorax), end of tubercles, spot on axillæ, narrowly interrupted band on scutellum, spot at each side of first abdominal segment, very broadly interrupted band on second, less broadly interrupted band on third, one very narrowly interrupted on fourth, and that on fifth only emarginate anteriorly in middle, sixth segment with a transverse oblong patch. Head and thorax very densely and finely punctured; flagellum dark chestnut-red beneath; pubescence of head and thorax very scanty, white; tegulæ large, closely punctured, with a pallid mark in front. Wings dusky; femora bright ferruginous; anterior tibiæ black with a pale stripe on outer side, red on inner; middle tibiæ similarly marked, but hind ones with only the apical part red on inner side; tarsi mainly dark, but the very broad hind basitarsi pale yellowish on outer side; hair on inner side of tarsi ferruginous; ventral scopa very pale yellowish. The hind tibiæ are very robust.

Bababuddin Hills, Mysore, 4700 ft., June 1, 1915.

Related to *D. rasorium* (*Anthidium rasorium*, Smith), but without the abundant white pubescence, and differing in the details of coloration.

Parevaspis carbonaria (Smith).

Coimbatore District, Bailur Forests, Nov. 23-28; Chittoor, April 19-27.

Ceratina canarensis, sp. n.

♀.—Length 10 mm.

Black, with bright yellow markings on head and thorax as follows: very broad band down middle of clypeus, with a short truncate projection on each side at lower end; low and broadly triangular supra-clypeal mark; very broad bands along inner orbits, extending across to borders of clypeus and supra-clypeal area; two spots below ocelli; cheeks, except uppermost part adjacent to eye; border of prothorax, not reaching tubercles; tubercles; very broad vertical band on pleura; two lines on disc of mesothorax, and short broad lateral bands above tegulae; scutellum and axilla, except extreme base; line on postscutellum; and metathorax except basal area. Eyes dark olive-green; mandibles dark apically, otherwise pale yellow suffused with red; fl-gellum very obscure reddish beneath; mesothorax polished and impunctate on disc, but anteriorly dull and finely punctured; tegulae rufo-testaceous with a small yellow spot. Wings dusky, stigma and nervures picuous. Legs obscure reddish, anterior knees and tibiae yellow suffused with reddish. Abdomen with the first three segments dark reddish, the others black, the apical margin of fourth and fifth narrowly testaceous; first segment with a yellow discal patch, subquadrate with a posterior extension, on each side of this the surface is black, but the posterior margin is broadly rufous; second segment posteriorly with a broad, paler, somewhat yellowish band, interrupted in middle.

South Canara District, Nagody, 2500 ft., Sept. 19, 1913.

Related to *C. hieroglyphica*, Smith, but distinguished by the coloration of the abdomen and the very broad lateral yellow bands on face.

Lithurgus australior, sp. n.

♂.—Length 12 mm.

Similar to the male of *L. atratus*, Smith (Khasia Hills, Sladen), but differing thus: face thickly covered with pure white hair, not mixed with black; a tuft of white hair

between ocelli; thorax anteriorly, and tubercles, with white hair, but hair of mesopleura black; tegulæ smaller. Wings shorter, marginal cell less sharply acuminate, second submarginal cell much shorter; hind basitarsi curved but simple, not enlarged at end. Abdomen above very smooth and shining, not distinctly roughened or punctured; black hair at sides of fifth and sixth segments much shorter. In Friese's table it runs to *L. dentipes*, Smith, but the true *dentipes* is Australian, and has pale yellow hair on face and ferruginous nervures; the stigma and nervures are reddish fuscous in *L. australior*, and the disc of the thorax, except anteriorly, has black hair.

Coimbatore, S. India, Nov. 12, 1913.

The abdomen is distinctly narrower than in *L. atratus*.

Cælixys (Liothyrapis) dormitans, sp. n.

♂.—Length about 13 mm.; anterior wing 7·8 mm.

Black, including antennæ, tegulæ, legs, and spurs; pubescence pure white, abundant and dense on face, on the abdomen forming interrupted bands in the depressions, and marginal bands, evanescent or failing in middle; eyes dark brown, hairless; mesothorax and scutellum very densely and strongly punctured, except that in the middle the shining surface can be seen between the punctures (very narrowly and slightly on scutellum); scutellum convex, obtusely subangular posteriorly; axillar spines reduced to short obtuse tubercles. Wings dusky, but not strongly darkened; anterior coxæ with sharp spines. Abdomen shining, well punctured, the punctures on second segment conspicuously larger than those on third; terminal segment with a long subbasal spine on each side; apex produced, deeply sulcate, with no median spine; lower apical spines sharp and divergent, upper apical divisions briefly bidentate or tridentate. Related to *C. apicata*, Smith, but the end of the abdomen is different. In *C. apicata* the second submarginal cell receives the first recurrent nervure some distance from its end; in *C. dormitans* the first recurrent meets the first transversocubital nervure. (The *C. apicata* compared is from F. Smith's collection.)

Coimbatore, S. India, May 25, 1913, sleeping on grass.

Megachile (Eumegachile) triangulifrons, sp. n.

♀.—Length 15 mm.

Agreeing in all respects with Smith's description of his

M. cephalotes, except that the abdomen is not at all metallic, and the ventral scopa, instead of being entirely white, is cream-colour, black on the last segment and the apex of the penultimate one. It also differs from *cephalotes* in the structure of the face, which is not described by Smith. The supraclypeal area presents a large pit or hollow, surrounded by a triangular rim, which is variably but not coarsely punctured; the clypeus is smooth and deeply receding, with a strong dentiform median tubercle near the upper end.

Hindupur, Anantapur District, April 9-14, 1915.

M. cephalotes was described from Northern India; Bingham reported it from Dehra Dun and Ahmedabad.

Megachile (Eumegachile) ramakrishnæ, sp. n.

♀. (Type.)—Like *M. triangulifrons*, but smaller, length not quite 13 mm.

Ventral scopa black only at extreme apex, even the base of last segment with pale hair; supraclypeal basin less distinct, with large coarse punctures about its margin, the area between it and the clypeus (practically obsolete in *triangulifrons*) quite wide, and coarsely punctured, with a median smooth tubercle; clypeus short, with the median tubercle not nearly so large as in *triangulifrons*; mandibles with the second tooth, prominent in *triangulifrons*, subobsolete.

♂.—Length about 8.5 mm.

Hair of face dense and pure white, but the upper part of the clypeus is closely and minutely punctured, and bare; anterior coxæ with short but well-developed spines; anterior tibiae and basitarsi polished and dark brown on inner side, the basitarsi distinctly hollowed and a little produced at end; end of abdomen bituberculate, and at the sides subapically are long black hairs.

Coimbatore, Nov. 1913.

There are three other species in the Indian fauna which should be compared with the above two. *M. arcuata*, Ckll., from Punjab, is similarly formed, and the distinct tubercle on the inner border of the mandibles is represented in *triangulifera*. In the species just described the hair on the dorsum of thorax is scanty and wholly white, but the thorax of *arcuata* has sparse black hairs above. *M. arcuata* also lacks the tubercle on clypeus.

M. lissopoda, Cam., from Bombay, has the hair of pleura soot-coloured; in our insects it is thin and white. *M. lisso-*
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poda has not the long curved mandibles of *M. cephalotes* and our insects, and the structure of the face differs.

M. stirostoma, Cam., from Dehra Dun, differs by the essentially hyaline wings, those of our insects being strongly smoky, except at base. The structure of the face and front also differ; thus there is no median tubercle on the clypeus. There is black hair on the apical part of scutellum and on postscutellum, but the hair of these parts is all white in our species.

Megachile aureobasis, sp. n.

♂.—Length about 10 mm.

Black, the wings fuliginous except the base, which is strongly orange. Very close in all respects to *M. umbripennis*, Smith, from Nepal, but differing thus: hair of thorax above thin and short, so that the thorax appears dark, except around the margins, where the fox-red hair is conspicuous; abdomen with entire hair-bands, that at apex of second segment red except at sides; front above antennæ without a distinct band of fulvous hair. The end of the abdomen is faintly emarginate.

Madras, Sept. 3, 1907 (*T. S. A.*).

Perhaps only a local race of *M. umbripennis*, but I have seen no intermediates.

Megachile anthracina, Smith.

♂. Coimbatore, Nov. 1913.

XV.—*Note on Chaudhuria, a Teleostean Fish of the Order Opisthomi.* By C. TATE REGAN, M.A., F.R.S.

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IN a recent memoir on the fishes of the Inlé Lake (Southern Shan States) Dr. Annandale* has described a new genus and species to which he has given the name *Chaudhuria caudata*, and has made it the type of a new family—Chaudhuriidæ—of the order Apodes. On reading Dr. Annandale's description and studying his figures I came to the conclusion that this little fish was not a member of the Apodes (*cf.* Regan †), but

* Annandale, "Fish and Fisheries of the Inlé Lake," *Rec. Ind. Mus.* xiv. 1918, pp. 33-64, 7 pls.

† Regan, "The Osteology and Classification of the Teleostean Fishes of the Order Apodes," *Ann. & Mag. Nat. Hist.* (8) x. 1912, pp. 377-387.